

REMARKS

Claim Interpretation

The Examiner noted that steps (d) – (f) in claim 17 are optional and for that reason the limitations of claim 19 are met when step (d) is not present. Applicants have now amended claim 17, step (d) so that the step is no longer optional and accordingly the limitations of claim 19 are not met.

Claim Rejections – 35 U.S.C. §103

Claims 1-29 are rejected under 35 U.S.C. §103(a) as being unpatentable over Lewis et al. (U.S. Patent No. 6,177,578) in view of Lewis et al. (U.S. Patent No. 5,232,820).

The essence of the present invention is the production of filamentary particles. Such particles and methods for their preparation are not disclosed or suggested by the cited prior art.

The Lewis et al reference, U.S. Patent No. 5,232,820 discloses crystals, not filamentary particles. The same reference also discloses in column 4, line 68 and column 5, lines 1-4, that "having an average particle diameter of about 0.02 micrometer crystals of undesirable size can be reformed by aging or chilling with water reconstitution to provide a dispersion of more uniform crystalline size within the desired range".

As regards to forms the particles of the reference invention is, accordingly, crystalline, while that of the present invention is filamentary or string-like.

Applicants do not disagree that lithium salt crystals can be grown to larger sizes, for instance, by prolonged digestion of the dispersion at temperatures of 50°C or more. However, while this procedure results in larger crystals, they are still of tabular form with sizes up to 5 microns x 10 microns x 0.5 microns. The length-to-width ratio of the larger crystals is essentially the same as that of the smaller crystals, i.e. about 2:1.

The filamentary particles of LiPCDA (pentacose-10, 12-diynoic acid and others) of the present invention are distinct from the tabular crystals of LiPCDA (and others) described in the '578 patent. Not only do the filamentary particles have a clearly distinct length/width ratio, but they do not exhibit common characteristics of crystals. Crystals have a regular, three-dimensional arrangement of their component molecule. They are rigid and are bound by well-developed flat surfaces having straight edges. The filamentary particles of the present invention are neither rigid nor straight and do not exhibit a flat surface. Their characteristic is hair-like. Observation in the optical microscope shows the filamentary particles to be curved, frequently with multiple curves. In the optical microscope such particles can be observed in motion in the liquid dispersion and they appear to bend around immobile objects in the same manner as a long piece of string would bend around a rock in a stream.

U.S. Patent No. 5,232,820 teaches a process of making thermochromic quaternized polyacetylene dye salt derivatives.

The present invention does not claim or use such dye salt derivatives. In addition, the reference teaches crystals which are distinguished from the hair-like forms of the present invention as discussed above.

As to the responsiveness of radiation exposure, the prior art polyacetylene compounds appear to be incapable of forming stable radiation dosage indicia while the present invention, in the form of hair-like particles, exhibit a significantly greater sensitivity than the plate-like particles of the same compounds (see, for example, Example 19 of the specification).

As to the holding of obviousness, applicants would like to cite the requirements stated in *Graham v. John Deere Co.*, namely:

1. Determining the scope and contents of the prior art
2. Ascertaining the differences between the prior art and the claims at issue
3. Resolving the level of ordinary skill in the pertinent art
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

Some, if not all, of these requirements have not been met in the rejection.

1. The scope and content of the prior art have not been adequately met because the forms of the prior art compounds are crystalline, while the form of the present invention is filamentary (hair-like, string-like, bristle-like).
2. The differences between the prior art and the claims at issue are, again, not fully appreciated because the filamentary nature of the compounds of the present invention are treated as equivalent to those of the crystalline forms of the prior art.
3. The level of ordinary skill in the prior art does not appear to be an issue since the prior art is directed to essentially the same objects as the present invention. However, the method of achieving those objects is not met in the prior art and for that reason, not accomplished.
4. Objective evidence present in the application, namely, producing filamentary compounds/compositions are not taught or suggested in the prior art. The prior art does not teach or suggest such filamentary particles and, consequently, does not suggest a method of producing them. As discussed above, the modification of the particles in terms of length to width ratio is not taught, and even if it did, the modification of crystalline particles in terms of length to width ratio would not suggest the hair-like, string-like filamentary particles of the present invention. The supporting evidence of Lewis et al. (U.S. Patent No. 5,232,820) relates to crystals and not to filamentary materials.

For the above reasons, the rejection of the claims under 35 U.S.C. §103(a) should be withdrawn. Such action is respectfully solicited.

The prior art made of record and not relied upon in the rejection is acknowledged to be pertinent.

Respectfully submitted,

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